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## A New Subspecies of *Myotis evotis* (H. Allen) from Southeastern Arizona and Mexico

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In the course of a study of geographic variation in some bats of western North America, it was found that a small series of *Myotis evotis* (H. Allen) from localities in central and southeastern Arizona, southwestern New Mexico, Jalisco and Veracruz, Mexico, represents an heretofore undescribed subspecies. This subspecies may be known as

### *Myotis evotis apache* subsp. nov.

*Type.* Female, adult, skin and skull, catalog number 4809, Univ. Illinois Mus. Nat. Hist.; collected at Snow Flat, 8750 feet, Graham Mountains, Graham County, Arizona, August 8, 1951, by Donald F. Hoffmeister, original number 1595.

*Range.* Known from the Huachuca, White, Graham, Santa Rita, and Chiricahua mountains of Arizona, San Luis Mountains on the boundary between New Mexico and Chihuahua, Los Masos, Jalisco, and Perote, Veracruz, Mexico. Probably *M. e. apache* is present in suitable habitats throughout northcentral Mexico and southeastern Arizona.

*Diagnosis.* A subspecies of *Myotis evotis*, as this species was defined by Miller and Allen (1928), characterized by brown ears and membranes; short ears (less than 20 mm. measured from notch); dull brown dorsal coloration, with basal band of hair brownish rather than black; and a relatively broad, long median process on posterior margin of palate.

*Comparisons.* Compared with specimens of *M. e. evotis* (for list of comparative material, see under *Specimens examined*), *M. e. apache* has light brownish rather than blackish ears; shorter ears, 20 mm. or less measured from the notch in the flesh rather than usually more than 20

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mm.; wing and tail membranes lighter brown ; hairs on dorsum brown at base rather than black ; and median process on posterior margin of palate usually broad, long, and rounded rather than usually short and pointed. Throughout its range, *M. e. evotis* differs from *M. e. apache* as noted above, except for those specimens from Utah which have the ears and membranes slightly less blackish (somewhat brownish) and the basal band of the fur less blackish. In this regard, these specimens are somewhat similar to *M. e. apache*.

*Measurements.* The type specimen and three topotypes give the following average measurements, all in millimeters : total length 94 ; length of tail 46; length of hind foot 10.5 ; length of ear 19.4; forearm 38.5 ; condylobasal length 15.1 ; greatest length of skull (excluding incisors) 15.8; length of maxillary toothrow 6.4.

*Remarks.* *Myotis evotis apache* is a brown-eared southern race of the species in which the wing and tail membranes are brownish rather than blackish in color and the ears are short. The fur is dull brown with the basal bands of the hairs brownish rather than black. We are aware of the fact that the color of the pelage in certain species of *Myotis* is sometimes highly variable, even within a single population, as was noted by Benson (1949) in *Myotis volans* and Vaughan (1954) in *Myotis velifer*. Changes in the color of the pelage in *Myotis evotis*, according to our observations, do not seem to be great within a population. Changes noted were interpreted as due usually to age rather than genetic factors. Within the subspecies *M. e. evotis*, specimens have uniformly rather black ears, black wing and tail membranes, and the basal band of the dorsal fur blackish. Variations from this are slight and behave in a geographic pattern as indicated above under *Comparisons*. The general stability in color throughout the extensive geographic range of *M. e. evotis* leads us to believe that those bats from southeastern Arizona and Mexico with light-colored ears, light-colored membranes, and with hair that is brown basally, represent a distinct subspecies. In addition, the pelage of this subspecies is shorter and less dense than that of specimens of *M. e. evotis*. Cranial differences between *M. e. apache* and *M. e. evotis* are not great. However, the process on the posterior margin of the palate (median postpalatal process) is broad and rounded in *M. e. apache*, and this serves as an additional character, in many cases useful in distinguishing this subspecies from *M. e. evotis*.

The one specimen from the "White Mountains, Arizona," possibly is from Cooley's Ranch, for it was collected by W. W. Price who gives this locality in his account in Allen's paper (1895) . If this locality is correct, the specimen was taken near the place where a typical *M. e. evotis* was obtained (4 mi. s. Hannagan Meadow, Greenlee Co., Ariz.) . Although

the ears and membranes are light (as in *Al. e. apache*), we wonder if this possibly may be due to fading and that the specimen actually may be referable to *M. e. evotis*.

The specimen from Perote, Veracruz, can only be tentatively referred to *M. e. apache*, for the natural color of this specimen, preserved in alcohol, is unknown. The ears are short (measure 17 mm. now) as in *apache*; however, the median process on the posterior margin of the palate is not typical of *apache*. The ears and wing membranes look especially pale. Because of these characteristics and until more adequate material is available, we elect to regard the specimen from Perote as referable to the short-eared, light-membraned *apache*.

Throughout southeastern Arizona, the species *Myotis evotis* is not abundant. In the Graham Mountains, *M. e. apache* was encountered in only one place, a locality in the Canadian-Transition life-zone. This subspecies probably occurs in parts of central Mexico between the International Boundary and Veracruz. The name "*apache*" is chosen in allusion to the occurrence of this race in part of the region sometimes referred to as the Apachian biotic province.

#### Specimens Examined

*Myotis evotis apache*, total number 12, from localities as follows: ARIZONA: *Graham County*: Snow Flat, Graham Mountains 4 (Univ. Ill.). *Navajo Co.*: White Mountains (Cooley Ranch, T 8 1/2 N, R 23 E) 1 (Amer. Mus. Nat. Hist.). *Cochise Co.*: Chiricahua Mountains 1 (Amer. Mus. Nat. Hist.); Paradise 1 (U.S. Nat. Mus.); Miller Canyon, 10 mi. sse. Fort Huachuca 1 (Univ. Ill.). *Pima Co.*: 30 mi. se. Tucson 1 (U.S. Biol. Surv. Coll.). MEXICO: *Chihuahua—New Mexico*: e. side San Luis Mountains, on the Mexican boundary line 1 (U. S. Nat. Mus.). *Jalisco*: Los Masos 1 (Amer. Mus. Nat. Hist.). *Veracruz*: Perote 1 (U. S. Biol. Surv. Coll.).

*Myotis evotis*, total number 47, from localities as follows: ARIZONA: *Coconino Co.*: from North Rim of Grand Canyon (all in Univ. Ill.): Neal Spring 4; Greenland Lake 3; 1/2 mi. s. North Rim entrance 2; old C.C.C. area overlooking Kaibab Trail 2; Sunset Crater 1 (Univ. Mich.). *Greenlee Co.*: K. P. Cienega, 4 mi. s. Hannagan Meadow 1 (Univ. Ill.). *Apache Co.*: 25 mi. ne. White River 1 (Coll. P. H. Krutzsch). UTAH: *Utah Co.*: Nebo Creek 1 (Univ. Utah). *Weber-Box Elder Co. line*: Mt. Willard 2 (Univ. Utah). *Uintah Co.*: 2 mi. above White River 1 (Carnegie Mus.); Willow Cr., 25 mi. s. Ouray 1 (Univ. Utah). *Washington Co.*: Zion National Park 1 (Univ. Utah). *San Juan Co.*: Verdure 1 (Univ. Utah). WYOMING: *Uinta Co.*: 15 mi. w. Ft. Bridger 1 (Carnegie Mus.). MONTANA: *Beaverhead Co.*: 3 mi. n. Wisdom 1 (Carnegie Mus.). COLORADO: *Pitkin Co.*: 6 mi. se. Aspen 1 (Coll. G. Frum). *Gunnison Co.*: 4 mi. w. Sapinero 1 (Univ. Kansas). NEW MEXICO: *Valencia Co.*: mi. se. Paxton 3 (Univ. Mich.); **PA** mi. sw. San Mateo 1 (Univ. Mich.).

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NEVADA: *White Pine Co.*: Willow Creek 1 (Univ. Kansas) . *Mineral Co.*: Fletcher 2 (Coll. G. Frum) . *Clark Co.*: Sheep Mountains 1 (Univ. Kansas) .  
CALIFORNIA: *Tuolumne Co.*: 1 mi. ne. Mather, 4900 ft. 1 (Univ. Kansas) .  
*Los Angeles Co.*: San Antonio Canyon, San Gabriel Mountains 11 (Univ. Kansas) .  
*San Diego Co.*: Cuyamaca State Park 2 (Coll. G. Frum and Univ. Kansas) .

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